

Amendments to Claims:

Please amend the claims as in the following listing:

What is claimed is:

- 1 1. (Canceled) A method for producing very high crown and camber
2 curvature in slider materials having a flex side and an air-
3 bearing side using a laser processing system which produces a
4 pulsed laser beam, comprising the steps of:
5 (A) establishing a focal plane for the laser beam, the
6 laser beam having a pulse width in the range of 1×10^{-9} seconds
7 to 1×10^{-3} seconds, with an energy per pulse in the range of 1
8 to 1,000,000 microJoules, and a repetition rate between 1Hz and
9 400Hz;
10 (B) applying the pulsed laser beam to the flex side of the
11 slider material; and
12 (C) varying the relative positions of the slider material
13 and the focal plane of the laser beam to optimize the curvature.
- 1 2. (Canceled) The method of claim 1, wherein the laser
2 processing system further comprises a focusing device, whereby
3 the focal plane of the laser beam is established.
- 1 3. (Canceled) The method of claim 2, wherein said focusing
2 device is at least one lens mounted on a moveable stage, whereby
3 the position of the focal plane relative to the slider material
4 can be varied.
- 1 4. (Canceled) The method of claim 1, wherein the laser
2 processing system further comprises a movable stage to which the
3 slider material is attached, the position of the slider material
4 relative to the focal plane can be varied.
- 1 5. (Canceled) The method of claim 1, wherein the laser is Q-
2 switched.
- 1 6. (Canceled) The method of claim 1, wherein the laser beam is
2 conditioned with a beam expander with adjustable beam expansion.
- 1 7. (Canceled) The method of claim 1, wherein the laser beam is
2 produced through harmonic generation.

1 8. (Canceled) The method of claim 1, wherein the laser beam is
2 moved by at least one directing optic.

1 9. (Canceled) The method of claim 8, wherein at least one
2 directing optic includes at least one reflecting mirror.

1 10. (Canceled) The method of claim 1, wherein the slider
2 material is one or more rows of sliders.

1 11. (Canceled) A method for producing very high crown and camber
2 curvature in slider materials having a flex side, using a laser
3 processing system which produces a laser beam which produces
4 fluence which is variable in a controllable manner, comprising
5 the steps of:

6 (A) applying the laser beam to the flex side of the slider
7 material, the laser beam having a pulse width in the range of 1×10^{-9}
8 seconds to 1×10^{-3} seconds, with an energy per pulse in
9 the range of 1 to 1,000,000 microJoules, and a repetition rate
10 between 1Hz and 400Hz; and

11 (B) varying the fluence of the laser to optimize the
12 curvature in the slider material.

1 12. (Canceled) The method of claim 11, wherein fluence is
2 controllably varied by changing the power output of the laser.

1 13. (Canceled) The method of claim 11, wherein fluence is
2 controllably varied by changing the spot size of the laser beam.

1 14. (Canceled) The method of claim 13, wherein the spot size of
2 the laser beam is varied by changing the relative positions of
3 the slider material and the focal plane of the laser beam.

1 15. (Canceled) The method of claim 14, wherein the spot size is
2 controllably varied by moving the focal plane of the laser beam
3 relative to the slider material.

1 16. (Canceled) The method of claim 15, wherein the focal plane
2 of the laser is moved relative to the slider material by using
3 at least one focusing lens which is attached to a movable mount.

1 17. (Canceled) The method of claim 14, wherein the slider
2 material is moved relative to the focal plane of the laser by
3 using a movable mount to which the slider material is attached.

1 18. (Canceled) The method of claim 11, wherein fluence is
2 controllably varied by adjusting the beam expansion of the laser
3 beam.

1 19. (Canceled) The method of claim 11, wherein the slider
2 material is one or more rows of sliders.

1 20. (Currently amended) An apparatus for creating high crown
2 and camber curvature in slider materials having an air bearing
3 surface and a flex side, comprising:
4 a laser which produces a pulsed laser beam for machining
5 the slider material, ~~the laser beam having a pulse width in the~~
6 ~~range of 1×10^{-9} seconds to 1×10^{-3} seconds, with an energy per~~
7 ~~pulse in the range of 1 to 1,000,000 microJoules, and a~~
8 ~~repetition rate between 1Hz and 400Hz;~~
9 at least one beam directing device, which directs the laser
10 beam onto the flex side of the slider material; and
11 a fluence varying device so that optimal fluence is
12 achieved to produce optimal curvature.

1 21. (Original) The apparatus of claim 20, wherein:
2 the fluence varying device is at least one focusing lens
3 which directs the laser beam to focus within a focal plane and
4 a movable fixture which varies the position of the slider
5 material with respect to the focal plane.

1 22. (Original) The apparatus of claim 21, wherein:
2 the movable fixture is a movable stage upon which the
3 slider material is attached, and by which the slider material is
4 moved relative to the focal plane.

1 23. (Original) The apparatus of claim 21, wherein:
2 the movable fixture is a movable stage upon which the lens
3 is attached, and by which the focal plane is moved relative to
4 the slider material.

1 24. (Original) The apparatus of claim 20, wherein the laser is
2 Q-switched.

1 25. (Original) The apparatus of claim 20, wherein the laser beam
2 is produced through harmonic generation.

1 26. (Original) The apparatus of claim 20, wherein the laser beam
2 is moved by at least one directing device.

1 27. (Original) The apparatus of claim 26, wherein at least one
2 directing optic includes at least one reflecting mirror.

1 28. (Original) The apparatus of claim 20, wherein the laser beam
2 is conditioned with a beam expander that has adjustable beam
3 expansion.

1 29. (Original) The apparatus of claim 20, wherein the slider
2 material is one or more rows of sliders.

1 30. (Canceled) A slider having optimized crown or camber
2 curvature prepared from substrate material having an air-bearing
3 side and a flex side, prepared by a process using a laser which
4 produces a pulsed laser beam, the process comprising the steps
5 of:

6 (A) applying the laser beam to the flex side of the
7 substrate material; and

8 (B) varying the fluence of the laser beam to optimize the
9 curvature in the substrate material.

1 31. (Canceled) A slider prepared by the process of claim 30,
2 wherein fluence is controllably varied by changing the power
3 output of the laser.

1 32. (Canceled) A slider prepared by the process of claim 30,
2 wherein fluence is controllably varied by changing the spot size
3 of the laser beam.

1 33. (Canceled) A slider prepared by the process of claim 32,
2 wherein the spot size of the laser beam is varied by changing
3 the position of the substrate material relative to the focal
4 plane of the laser beam.

1 34. (Canceled) A slider prepared by the process of claim 32,
2 wherein the spot size is controllably varied by changing the
3 position of the focal plane of the laser beam relative to the
4 substrate material.

1 35. (Canceled) A slider prepared by the process of claim 34,
2 wherein the focal plane of the laser is moved relative to the
3 substrate material by using at least one focusing lens which is
4 attached to a movable mount.

1 36. (Canceled) A slider prepared by the process of claim 30,
2 wherein the laser beam is conditioned with a beam expander that
3 has adjustable beam expansion.

1 37. (Canceled) A slider prepared by the process of claim 30,
2 wherein the substrate material is one or more rows of sliders,
3 which are then separated to produce individual sliders.

1 38. (New) The apparatus of claim 20, wherein the laser
2 processing system produces laser pulses with a pulse width in
3 the range of 1×10^{-9} seconds to 1×10^{-3} seconds.

1 39.(New) The apparatus of claim 20, wherein the laser processing
2 system produces laser pulses with an energy per pulse in the
3 range of 1 to 1,000,000 microJoules.

1 40.(New) The apparatus of claim 20, wherein the laser processing
2 system produces laser pulses with a repetition rate between 1Hz
3 and 400Hz.